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ABSTRACT

The L&J Software Analysis Checklist II was designed to assess the therapeutic value of software for educational and clinical utilization. Its three sections focus on program specifics, skill area components (such as sensory motor, cognitive, perceptual, psychosocial and life skills), and other information. Each of the skill area components is further broken down. Information is presented on sources of inexpensive or free software (including liquidation catalogs and public domain software). (CL)

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Software Analysis
For Educational And Clinical Utilization

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Abstract

There are many software programs designed to remediate specific sensory, motor, cognitive, perceptual, psychosocial, and life skills. Because the research and development costs are similar to those of mass marketed products and there are fewer consumers for the specialized products, the expense of such products is somewhat prohibitive for educational agencies, allied health clinics, and families of disabled individuals interested in the continuation of the educational or clinical program to the home. With the need for a less expensive solution, the L&J Software Analysis Checklist II was designed by an educator/clinician to critically examine and assess the therapeutic content of software for educational and clinical utilization. Any type of software may be analyzed using the L&J Checklist. This paper presents a discussion of the L&J Software Analysis Checklist II as well as strategies for locating inexpensive or free software, and methods of implementing a system of inexpensive software designed to improve various skills.

On the market there are many software programs designed to remediate specific sensory, motor, cognitive, perceptual, psychosocial, and life skills. While the research and development costs are similar to those of mass marketed products, there are fewer consumers for the specialized products. Thus the expense of such products is somewhat prohibitive for educational agencies and allied health clinical facilities, and even more so for families of disabled individuals interested in the continuation of the educational or clinical program in the home.

Originally specialized software was designed to be used at home daily or several times during the day by patients, clients, or students and the progress monitored weekly in the clinic or classroom. Today, in many cases the only use of therapeutic software takes place once or twice a week in a therapeutic or educational setting. Because the remediation of skills involves the learning process and learning occurs over many, short periods of time, the current methodology of school or clinical computer utilization falls short of desired expectations.

Seeing the need for a less expensive solution, the L&J Software Analysis Checklist II was created. The L&J Checklist was designed by an educator/clinician to critically examine and assess the therapeutic content of software for educational and clinical utilization. Any type of software, from a word processing program to an educational shape recognition program, may be analyzed using the L&J Checklist; even strategic or arcade type programs may be used.

The following discussion provides a delineation of the L&J Software Analysis Checklist II as well as strategies for locating inexpensive or free software, and methods of implementing a system of inexpensive software designed to improve various skill area components or individual skills.

The L&J Software Analysis Checklist II

There are three sections of the L&J Software Analysis Checklist II; the top component comprised of program specifics, the middle section composed of skill area components and individual skills, and the bottom component formed of other information. Each section is detailed in the following discussion.

The program specifications and hardware requirements are delineated in the top section. Users of the L&J Checklist complete the name of the specific software program; the author or manufacturer; and the software format of disk, cartridge, or cassette in the appropriate spaces. The details of the hardware needed to run and operate the particular program may be completed in the area marked hardware requirements. For example some programs are available for the same computer in cartridge as well as disk form, but the hardware requirements for each are very different. The cartridge format requires a computer and a monitor; however, the disk format requires a disk drive in addition to the computer and monitor.

Of prime importance, the second section is comprised of six skill area components: Sensory skills, motor skills, cognitive skills, perceptual skills, psychosocial skills, and life skills. Individual skills that constitute each skill area component are included in the subsequent discussion.

Eight skills: visual attention, visual discrimination, visual field, visual scanning, color discrimination, auditory attention, auditory discrimination, and rhythm sense comprise the sensory skills component. Visual attention is the ability to look at the screen, whereas visual discrimination is the ability to distinguish between two or more objects on the screen. Visual field refers to the ability to see all quadrants of the screen, and visual scanning is the ability of the eyes to track horizontally, vertically, and diagonally across the screen. Auditory attention refers to the ability to hear sound, and auditory discrimination is the ability to hear differences in two or more sounds. While it may be argued that there are two

modes of rhythm sense, a sensory mode and a motor mode, the type of rhythm listed is sensory and is defined as the ability to recognize a pattern of sounds.

There are seven skills listed for the motor skill area component; they are single touch, multiple touch, object manipulation, hand-eye coordination, response time, midline crossing, and motor planning. The first three skills deal with the method of input; single touch refers to the ability to respond with one touch of a button or key, multiple touch to the ability to respond with more than one touch of a button or key at one time, and object manipulation to the skill and performance in handling such objects as a joystick, paddles, rollerball, mouse, etc. Of the last four skills hand-eye coordination is the ability to use the hand in conjunction with the eye, response time is motor output judged by length of time, midline crossing refers to the ability to cross the vertical midline of the body, and motor planning is the ability to plan and implement purposeful movement in a untried, novel situation.

Concentration, attention span, time estimation, auditory memory, visual memory, categorization, organization, sequencing, association, instruction following, action/consequences, problem solving, and decision making are the 13 skills that comprise the cognitive skill component. Concentration refers to the ability to focus on a task or concept, attention span adds the variable of time to task focus, and time estimation is the ability to judge time and variable lengths of time. Of the next three skills categorization is the ability to label objects, organization refers to the ability to sort objects into fewer, larger groups, and sequencing is the ability to place

objects in logical order. Association refers to the skill of remembering a second object when reminded with a first object. Instruction following is the ability to understand and implement single or multiple directions. Action/consequences is ability to know which specific reaction will follow a particular action. Problem solving is a higher level cognitive function and refers to the ability to identify a number of solutions to difficulties, whereas decision making is the ability to make a choice of a number of solutions identified.

The perceptual skills component area is comprised of eight skills: form constancy, figure ground, pattern recognition, position in space, spatial relations, three dimensions, depth and distance, and topographical orientation. Form constancy is the skill of recognizing specific forms and objects as the same when presented in different contexts, whereas figure ground is the ability to recognize forms and objects when presented with competing stimuli; e.g., distinguishing foreground from background. Pattern recognition refers to the ability to perceive a recurring sequence in objects. While position in space is the skill of knowing one's own place in space relative to other objects, spatial relations is the ability to recognize forms and objects in relation to each other. Three dimensions is the skill of perceiving the horizontal, vertical, and extension of depth; depth and distance is the skill of judging size and area; and topographical orientation refers to the ability of perceiving the directions of north, south, east, and west in addition to distinguishing the right side of the body from the left.

Five skills constitute the psychosocial skills area component. They include: self control, self expression, self concept, situational coping, community involvement, and socialization. Self control is the ability to modulate, modify or initiate new behaviors in accordance with the situation at hand. Self expression refers to the ability to experience and recognize a range of emotions and interpret and utilize a wide variety of verbal and nonverbal communication skills. Self concept refers to cognitive image of one's functional self and includes perceiving one's own needs, feelings, conflicts, values, beliefs, goals, and expectations. Situational coping is the skill in motivating performance, managing time, handling stress, and solving problems. Community involvement refers to the ability to assume one's own role and interact within the social system of the family and society. Socialization is the ability to relate to another person.

Sixteen skills: feeding/eating, grooming, dressing, kitchen management, household management, financial management, shopping, business management, written communication, augmentative communication, environmental control, functional academics, survival skills, educational skills, prevocational skills, vocational skills comprise the sixth and last skills component area, life skills. Feeding/eating refers to the ability to feed oneself sequentially including using the appropriate utensils; grooming refers to the skill and performance in attending to personal health care need such as bathing, haircare, shaving, etc.; and dressing is the ability to choose the appropriate clothing and dress oneself in a sequential fashion including fastenings. Kitchen management refers to the skill in

performing recipe handling, meal planning, nutrition care, and other kitchen tasks. Household management includes, but is not limited to, home inventories, cleaning schedules, and repair lists, whereas financial management refers to budgeting, banking, and tax preparation. Shopping is the skill and performance in preparing shopping lists, and includes conducting shopping expeditions via computer and modem. The ability to perform business application tasks such as accounting, filing, and typing are included in the business management skill. While written communication is the ability to relate using the written word, augmentative communication refers to the ability to use systems that enhance or provide communication of any kind. Environmental control is the ability to access and handle common objects such as light switches, doorknobs, curtain pulls, and appliances. Functional academics refers to basic arithmetic and language performance, whereas survival skills include, but are not limited to, the ability to understand road and building signs. Educational skills include computer assisted instruction (CAI), coursework, and completion of the requirement for degrees; prevocational skills include job awareness and vocational readiness performance; and vocational skill is the ability to perform a trade or profession.

The third section, the bottom component, lists the following areas for completion: modifications required, program strengths and weaknesses, primary and secondary skill area, age level, reading/grade level, date and evaluator. The modifications required area may be completed to include possible beneficial hardware or software changes; e.g., change the program speed to slow down. The area for program strengths and weaknesses may be used to stress specific

advantages or disadvantages of the program; such as, the ability to change speeds or the existence of loud, offensive error responses. The primary and secondary skills area are included for cross referencing purposes: any of the six skill area components may be used to denote each program's primary and secondary skills area, or the 58 individual skills may be utilized. The age level area allows subsequent judgment of the age appropriateness of software and the reading level space was included to acknowledge literacy differences. The area for date and evaluator permits updates and continuity in the personnel evaluating the material.

Strategies For Implementation

Every assessment device requires appropriate materials for measurement; the L&J Software Analysis Checklist II is not an exception to this rule. In order to keep the costs of software as low as possible and also allow ready access for patients, clients, and students to improve various skill area components or individual skills at home, inexpensive and free software packages have been selected as the materials of choice.

Inexpensive software are those copyrighted programs or packages which may be purchased for less than $15. These packages may be found in large discount stores, at computer stores on closeout shelves, in pages of liquidation catalogs, and on commercials of cable television, to name a few sources. Sources of inexpensive software must be checked several times per month to locate bargains.

Another name for free programs is public domain software. This is software that was written by individuals who, for some reason, have relinquished the copyright privileges. One source of public

secondary skill level, age level, and reading level; the L&J Checklists for each topic may be stored in a loose leaf binder for easy access. Following the evaluation of a new patient, client, or student and the identification of performance deficits, the appropriate field may be printed from the hard disk file or binder be investigated to match a program to the specific needs of the individual. If the program selected is public domain, the program may be legally copied and issued for home use if the individual has a computer.

Summary

The combined use of the L&J Software Analysis Checklist II and inexpensive or free software provides a solution to the dilemna of the prohibitive expense of software designed for special needs and allows the therapeutic remediation of sensory, motor, cognitive, perceptual, psychosocial, and life skills in the classroom, clinic, and home.

domain programs is the computer users group; users groups may be found locally, regionally and may have been formed around a specific computer brand or a particular interest common to all members. Other good resources are commercial firms, such as computer companies who, with very little advertisement, distribute the free software as a public service. Electronic sources, the commercial databases and electronic bulletin boards, are another resource. However, if there are long distance charges and line charges involved, special care must be taken that the software remain inexpensive following the downloading procedure. Local educational consortia are another possibility of locating public domain software as well as a location for perusing software before purchasing. More local public libraries are including nonprint materials in their collections; one commonly found library material is public domain software. These are a few resources to utilize in the search of public domain software.

To implement a system of software utilized to improve various skill areas or individual skills, software must be gathered and analyzed using the L&J Checklist. Before formal analysis it is best to spend some time working with the program, then at least two evaluators should analyze each program and meet to discuss the outcome of the L&J Checklist for each program. This will allow a greater consistency of measurement.

The best method of storing the information on the amassed L&J Checklists is on a hard disk; however, if a hard disk is unavailable, the completed L&J Checklist for each program may be photocopied three to five times for cross referencing purposes. The topics or fields for cross reference include computer brand, primary skill level,

Appendix

L & J Software Analysis Checklist II

Program Name: _____
Manufacturer: _____
Computer: _____
Format: [ ] 5 1/4" Disk [ ] 3 1/2" Disk [ ] Cassette [ ] Cartridge
Hardware Requirement: _____

Sensory Skills

[] Visual Attention
[] Visual Discrimination
[] Visual Field
[] Visual Scanning
[] Color Discrimination
[] Auditory Attention
[] Auditory Discrimination
[] Rhythm Sense

Perceptual Skills

[] Form Constancy
[] Figure Ground
[] Pattern Recognition
[] Position in Space
[] Spatial Relations
[] Three Dimensions
[] Depth and Distance
[] Topographical Orientation

Motor Skills

[] Single Touch
[] Multiple Touch
[] Object Manipulation
[] Hand-Eye Coordination
[] Response Time
[] Midline Crossing
[] Motor Planning

Psychosocial Skills

[] Self Control
[] Self Expression
[] Self Concept
[] Situational Coping
[] Community Involvement
[] Socialization

Cognitive Skills

[] Concentration
[] Attention Span
[] Time Estimation
[] Auditory Memory
[] Visual Memory
[] Categorization
[] Organization
[] Sequencing
[] Association
[] Instruction Following
[] Action/Consequences
[] Problem Solving
[] Decision Making

Life Skills

[] Feeding/Eating
[] Grooming
[] Dressing
[] Kitchen Management
[] Household Management
[] Financial Management
[] Shopping
[] Business Management
[] Written Communication
[] Augmentative Communication
[] Environmental Control
[] Functional Academics
[] Survival Skills
[] Educational
[] Prevocational
[] Vocational

Modification Required: _____
Strengths: _____
Weaknesses: _____

_____ Primary Skill Area
_____ Secondary Skill Area
_____ Date
_____ Evaluation

_____ Age Level
_____ Reading/Grade Level

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